

MECHATRONICS BOOK SERIES

CONTROL AND INTELLIGENT SYSTEMS

Momoh Jimoh E. Salami
Abiodun Musa Aibinu
Yasir Mohd Mustafah



IIUM Press

INTERNATIONAL ISLAMIC UNIVERSITY MALAYSIA

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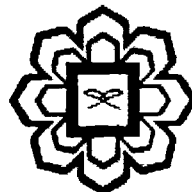
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EDITOR

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Published by:
IIUM Press
International Islamic University Malaysia

First Edition, 2011
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Perpustakaan Negara Malaysia

Cataloguing-in-Publication Data

Momoh Jimoh E. Salami, Abiodun Musa Arbinu, Yasir Mohd Mustafah: Mechatronics Book
Series: Control and Intelligent Systems

Bibliography p.
Includes Index
ISBN

ISBN: 978-967-418-176-5

Member of Majlis Penerbitan Ilmiah Malaysia – MAPIM
(Malaysian Scholarly Publishing Council)

Printed by :
IIUM PRINTING SDN.BHD.
No. 1, Jalan Industri Batu Caves 1/3
Taman Perindustrian Batu Caves
Batu Caves Centre Point
68100 Batu Caves
Selangor Darul Ehsan
Tel +603-6188 1542 / 44 / 45 Fax: +603-6188 1543
EMAIL: iiumprinting@yahoo.com

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Chapter 23

An Intelligent Car Surveillance System: Design and Tools Selection

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23.1 Introduction

This chapter is designed to complement the current car security system by being able to send a short message text to the affected car owner. Although most cars nowadays are fitted with a car security system, it has some weaknesses. Despite the fact that a siren goes out when there is an intrusion, the owner may not be able to hear the siren because they might not be near the car, or they may be inside a building. Through this complementary security system however, the owner of the car that has been broken into, can immediately be informed about the intrusion via Short Message Service (SMS). The complementary system uses the global system for mobile communication (GSM) Modem and the cellular phone. A Programmable Logic Controller (PLC) console is utilized as the main controller. The input and the output peripheral devices are interfaced to the PLC. Three limit switches represent the inputs and will act as the door sensor, shock sensor and tilt sensor respectively. The primary output is the GSM Modem, as it has the message sending capability. The Immobilizer system is also simulated whereby the car will be immobilized once it is armed. This project is not only complementary, but also an improvement to existing car security systems as the improved version will most probably foil an attempt to steal a car.

23.2 System Design

This chapter is significant because the current system's weaknesses can be exploited by smart thieves. The security system designed will overcome the existing shortcomings by including additional security features. Once the car is tampered with, the owner will promptly receive a short message on their cellular phone, thereby making it possible for the owner to quickly proceed to their car and prevent a potential theft of their car or valuable belongings in the car. The system will include the following and as shown in Figure 23.1.

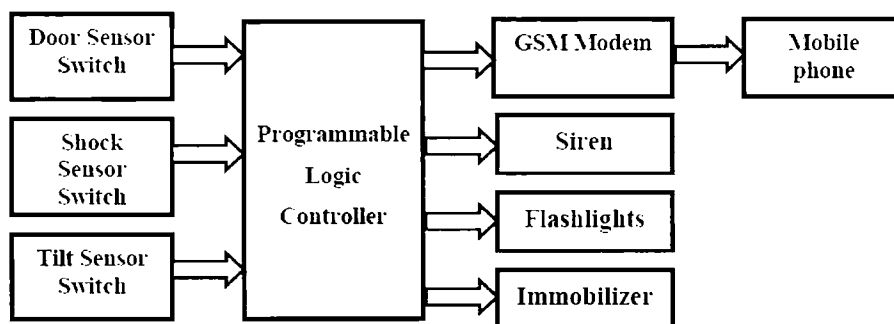


Figure 23.1: Basic Overview of the System Design

- 1) The Programmable Logic Controller as the main controller
- 2) The input peripheral devices connected to the PLC consist of the door, shock and tilt sensor switches.